REMARKS

The comments of the applicant below are each preceded by related comments of the examiner (in small, bold type).

2. Claims 24, 25, 27-31, 42, and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are directed to an apparatus and include process or method limitations such as: "wherein the first and second plasmas have a specified ratio such that a combination of the first and second plasmas etch the quartz plate in which the rate of etching across the quartz plate is within 1% of the rate of etching at the central portion of the quartz plate" (claim 24); the amounts of the first and second plasmas having a specified ratio such that a combination of the first and second plasmas etch the substrate in the chamber in which the rate of etching across the substrate is within 1 % of the rate of etching at a central portion of the substrate" (claim 27); or "the rate of etching at a peripheral portion of the surface is within 1% of the rate of etching at a central portion of the surface" (claim 42 and 43). These process limitations render the claims indefinite in that the combination of two separate statutory classes of invention, a manufacturer or seller of the claimed apparatus would not know from the claim whether it might also be liable for contributory infringement because a buyer or user of the apparatus later performs the claimed method of using the apparatus. Thus the claims are not sufficiently precise to provide competitors with an accurate determination of the metes and bounds of the protection involve, and are ambiguous. (See 77USPQ2D 1140, IPXL Holdings LLC v. Amazon.com Inc.)

Without conceding the examiner's points, claims 24, 27, 42, and 43 have been amended. IPXL Holdings LLC v. Amazon.com (77 USPQ 2D 1140) can be distinguished because the claim at issue (claim 25) in IPXL recited "the user uses the input means to either change the predicted transaction information or accept the displayed transaction type and transaction parameters," which is directed to how a user uses the input means. Claim 24 of the present application recites properties of the first and second plasmas not a method of using the plasmas.

Claims 27, 42, and 43 are patentable for at least similar reasons as claim 24.

4. Claims 27-31, 42, and 43 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jucha et al, US Patent 4,874,723. Jucha et al teaches a plasma etching apparatus that includes: a chamber 1306; a support 1320 for supporting a wafer (plate) 48; a first high frequency source attached to an electrode 1314; a second high frequency source attached to a remote plasma generator 1326; an inlet structure 1304, 1322; mass flow controllers connected to each gas inlet to control the amount and concentration of the gases supplied to the chamber and controlled by a control system

206. Jucha et al also teaches forming mixed gas plasma containing SF6 and CF4. (Entire document, specifically, figure 32, column 51 lines 36-41; and column 64 line 48-51) The specific ratio of the plasmas formed from SF6 and CF4 is an intended use of the apparatus. The apparatus of Jucha et al is capable of forming such a mix of plasmas such that the rate of etching across the substrate is within 1% of the rate of etching at the central portion of the substrate. Furthermore, it has been held that: claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danley, 120 USPQ 528, 531, (CCPQ 1959); "Apparatus claims cover what a device is, not what a device does" (Emphasis in original) Hewlett-Packard Co. V. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990); and a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus " if the prior art apparatus teaches all the structural limitations of the claim Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Also see MPEP 2114. Alternately, if the ratio of the plasmas is held not to be an inherent intended use of the apparatus of Jucha et al, then it would had been obvious to one of ordinary skill in the art at the time of the invention was made to use the optimum ratio of SF6 and CF4 plasmas to uniformly etch the substrate.

The examiner appears to make three arguments:

First, because Jucha discloses an apparatus that is capable of forming a mixture of plasmas such that the rate of etching across the substrate is within 1% of the rate of etching at the central portion of the substrate, forming such mixture of plasmas is an intended use of the apparatus of Jucha.

Second, the first and second plasmas are not part of the apparatus of claim 27, recitation of the plasmas are limitations directed toward an intended use of the apparatus, and thus limitations with respect to the plasmas do not need to be considered when deciding whether claim 27 is anticipated by Jucha.

Third, if the ratio of plasmas is not an intended use of the apparatus of Jucha, it would have been obvious to use the optimum ratio of SF6 and CF4 plasmas to uniformly etch the substrate.

Regarding the examiner's first argument, Jucha does not disclose and would not have suggested that the first and second plasmas have a specified ratio such that a combination of the first and second plasmas would etch a substrate such that the rate of etching across the substrate is within 1% of the rate of etching at the central portion of the substrate. Just because Jucha's apparatus is "capable" of forming a mixture of plasmas

having the properties recited in claim 27 does not mean that Jucha disclosed or would have made obvious an apparatus having a mixture of plasmas having those properties.

Regarding the examiner's second argument, the applicant notes that claim 27 positively recites the first and second plasmas. The first and second plasmas are part of the apparatus and are not merely related to an intended use of the apparatus. Because Jucha does not disclose and would not have suggested first and second plasmas having the properties recited in claim 27, Jucha does not anticipate claim 27.

In each case cited by the examiner, the court reached its conclusion based on the particular language used in the claims at issue. Based on the differences between claim 27 and the claims cited in those cases, the examiner has applied the cases incorrectly.

The examiner quoted In re Danly, 120 USPQ 528 (CCPQ 1959) out of context. The court in In re Danly allowed claims 3 to 7 of the appellant, which include functional language "means for connecting the ends of the series-connected tie rods to a source of alternating current potential," "for holding" and "for insulating". The court held that claims 3 to 7 should be construed as being limited to an apparatus in which alternating current is actually applied to the tie rods. The court rejected claims 1 and 2 of the appellant because those claims call for a press structure in which the tie rods are insulated form the frame and in which the construction is "such that alternating current may be passed through the tie rod to heat the same." The court objected to the use of the term "may," stating that an alternating current may be passed through any prior art tie rod. The court stated that the "appellant's invention does not reside in a press in which it is possible to pass alternating current through the tie rods to heat them, but in a method and apparatus in which that is actually done. Claims drawn to an apparatus must distinguish from the prior art in terms of structure rather than function." In re Danly does not support the examiner's argument that plasmas cannot be part of an apparatus and should not be given patentable weight.

The examiner also quoted Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ 2d 1525 (Fed. Cir. 1990) out of context. In Hewlett-Packard, the court held that "there is no requirement, as B&L implies, that HP show 'operational differences' of the claimed device over

the prior art. Claim 1 of LaBarre is an apparatus claim, and apparatus claims cover what a device is, not what a device does. An invention need not operate differently than the prior art to be patentable, but need only be different." What the court is referring to is that Bausch & Lomb's argument (the use of a random pattern, size and height of rough spots on the wheel does not provide any "operational difference" over a knurled wheel) is without merit. The court stated that it is sufficient for claim 1 of LaBarre to be valid over the prior art when the structure recited in claim 1 is different, and that there is no requirement that the device of claim 1 operate differently from the prior art. The court's opinion is not relevant to the issue of whether plasmas should be given patentable weight in an apparatus claim.

Likewise, the examiner quoted Ex parte Masham, 2 USPQ 2d 1647 (Bd. Pat. App. & Inter. 1987) out of context. In Ex parte Masham, the appealed claim 1 recites "An apparatus for mixing flowing developer material, including: means defining a chamber, for receiving the flowing developer material therein; and means for mixing the following developer material, said mixing means being stationary and completely submerged in the developer material." The court stated that "[t]he preambular recitation 'for mixing flowing developer material ...' and the additional recitation 'completely submerged in the developer material' relate to the identity of the material worked upon by the claimed apparatus and the intended manner of employing the claimed apparatus." The court held that "a recitation with respect to the material intended to be worked upon by a claimed apparatus does not impose any structural limitations upon the claimed apparatus which differentiates it from a prior art apparatus satisfying the structural limitations of that claimed."

Claim 27 of the present application is very different claim 1 discussed in Ex parte Masham. Claim 27 positively recites first and second plasmas having particular ratios to achieve a particular result. The first and second plasmas are not limitations that "relate to the identity of the material worked upon by the claimed apparatus and the intended manner of employing the claimed apparatus."

Regarding the examiner's third argument, Jucha does not disclose and would not have suggested that the ratio of a first plasma and a second plasma would affect etching uniformity.

Nothing in Jucha would have suggested to one of ordinary skill in the art to use first and second plasmas having a particular ration to achieve uniform etching.

Claims 28-31 are patentable for at least the same reasons as claim 27. Moreover, these claims add additional distinctive features. For example, claim 31 recites "the first plasma and the second plasma have a specified ratio so that a sum of the positive ions in the first plasma and the positive ions in the second plasma is substantially uniform across a substantial portion of the substrate." Jucha does not mention anything about a sum of a positive ions in a first plasma and a positive ions in a second plasma, so Jucha does not disclose and would not have suggested that the sum is substantially uniform across a substantial portion of a substrate. Jucha does not suggest at least these features of claim 31.

Even if Jucha's apparatus inherently has a controller, Jocha does not disclose and would not have suggested that the controller be configured to control relative amounts of two different types of plasma etchants in the chamber to cause substantially uniform etching across a surface to be etched in the chamber, in which the rate of etching at a peripheral portion of the surface would be within 1% of the rate of etching at a central portion of the surface, as recited in claim 42.

Even if Jucha's apparatus inherently has a control mechanism, Jucha does not disclose and would not have suggested a control mechanism set to control a sum of positive ions in a first plasma and a second plasma to be substantially uniform across central and peripheral regions of a surface to be etched in the chamber, such that the rate of etching at a peripheral portion of the surface would be within 1% of the rate of etching at a central portion of the surface, as recited in claim 43.

5. Claims 24 and 25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jucha et al, US Patent 4,874,723. Jucha et al teaches a plasma etching apparatus that includes: a chamber 1306; a support 1320 for supporting a wafer (plate) 48; a first high frequency source attached to an electrode 1314; a second high frequency source attached to a remote plasma generator 1326; an inlet structure

1304, 1322; mass flow controllers connected to each gas inlet to control the amount and concentration of the gases supplied to the chamber and controlled by a control system 206. Jucha et al also teaches forming mixed gas plasma containing SF6 and CF4. (Entire document, specifically, figure 32, column 51 lines 36-41; and column 64 line 48-51) The specific ratio of the plasmas formed from SF6 and CF4 is an intended use of the apparatus. The apparatus of Jucha et al is capable of forming such a mix of plasmas such that the rate of etching across the substrate is within 1% of the rate of etching at the central portion of the substrate. Furthermore, it has been held that: claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danley, 120 USPQ 528, 531, (CCPQ 1959); "Apparatus claims cover what a device is, not what a device does" (Emphasis in original) Hewlett-Packard Co. V. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990); and a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus " if the prior art apparatus teaches all the structural limitations of the claim Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Also see MPEP 2114. The specific type of substrate (i.e. quartz) worked on is an intended use the apparatus. This rejection is based on the fact that the apparatus structure of Jucha et al is capable of working on (i.e. processing) a quartz substrate, as intended by the Applicant. It has also been held that "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 136 USPQ 458, 459 (CCPA 1963). See MPEP 2115. Alternately, if the ratio of the plasmas and the specific type of substrate treated is held not to be an inherent intended use of the apparatus of Jucha et al, then it would had been obvious to one of ordinary skill in the art at the time of the invention was made to etch a quartz substrate using the optimum ratio of SF6 and CF4to uniformly etch the substrate.

Claim 24 is patentable for at least similar reasons as claim 27.

6. Claims 24, 25, 27-31, 42, and 43 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Applicants disclosed prior art. After describing the apparatus found in Figure 1 the applicant further discloses that "A suitable plasma chamber apparatus is available as model VRL-ME-II-M-QTZ from Unaxis, St. Petersberg, Florida." (See the specification page 4 lines 13-15) The specific process performed on the specific type of substrate is an intended use of the apparatus. The apparatus disclosed by the Applicant can perform the desired process on the desired substrate as indicated by the Applicant.

The examiner appears to make two arguments:

(i) First, because the Unaxis plasma chamber is capable of using particular plasmas to etch a quartz plate, etching a quartz plate using the particular plasmas is an intended use of the Unaxis plasma chamber.

(ii) Second, the quartz plate and the plasmas are not part of the apparatus and thus do not need to be considered when deciding whether the apparatus is anticipated by the Unaxis plasma chamber.

With respect to the examiner's second argument, the applicant notes, as discussed above for claims 24 and 27, the claims positively recite the plasmas, and the plasmas are part of the apparatus. When determining whether the claims are anticipated by the Unaxis plasma chamber, the examiner must find all the limitations of the claims, including the plasmas, in the Unaxis plasma chamber. Because the Unaxis plasma chamber does not disclose and would not have suggested plasmas having the properties recited in the claims, the claims cannot be anticipated by the Unaxis plasma chamber.

Regarding the examiner's first argument, prior to applicant's invention, the Unaxis plasma chamber was not used to etch a substrate in which the rate of etching across the substrate to distances at least 50 mm from a central portion is within 1% of the rate of etching at the central portion, as recited in claim 24. Prior to the applicant's invention, it was not known that the Unaxis plasma chamber could achieve such uniform etching rate across a substrate. Therefore, prior to the applicant's invention, etching a substrate in which the etching rate across the substrate is within 1% of the rate of etching at the central portion of the substrate could not have been an intended use of the Unaxis plasma chamber.

7. Claims 24, 25, 27-31, 42 and 43 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hongoh, US Patent 6,343,56561. Hongoh teaches a plasma processing apparatus that includes: a chamber S; a support 24 for supporting a wafer (plate) W; a high frequency source 76; and an inlet structure comprising a first gas supply 54 connected to a first inlet 38 via a first flow controller 46, and a second gas supply 56 connected to a second inlet 40 via a second flow controller 48. (Figure 5) The particular type of gas used to form a specific plasma is a process limitation rather than an apparatus limitation, and the recitation of a particular type of plasma does not so limit an apparatus claim. This rejection is based on the fact that the apparatus of Hongoh is capable of supplying the desired gases at the desired ratio to form the desired ratio of plasmas such that the rate of etching across the substrate is within 1% of the rate of etching at the central portion of the substrate intended by the Applicant. Furthermore, it has been held that: claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danley, 120 USPQ 528, 531, (CCPQ 1959); "Apparatus claims

cover what a device is, not what a device does" (Emphasis in original) Hewlett-Packard Co. V. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990); and a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus " if the prior art apparatus teaches all the structural limitations of the claim Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Also see MPEP 2114. The specific type of substrate (i.e. quartz) worked on (i.e. etched) is an intended use the apparatus. This rejection is based on the fact that the apparatus structure of Hongoh is capable of working on (i.e. processing) a quartz substrate, as intended by the Applicant. It has also been held that "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." Experts Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 136 USPQ 458, 459 (CCPA 1963). Also see MPEP 2115. The only structural limitations claimed is a chamber in which a plasma containing multiple gases is formed and a flow controller to control the flow of the plasma gases. Hongoh teaches such a chamber. Claims 29-31 deal directly with how the apparatus is used. The limitations are specifically connected to the type of gases supplied and the specific mixture of these gases. The Examiner can find no structure taught by the applicant that directs or controls the gases to achieve these process limitations (i.e. showerhead, baffle) other than the generic gas inlet system. If fact, the only way to achieve these process limitations taught by the Applicant is to us known mass flow controllers to control the mixture or ratio of the gases delivered to a known apparatus. Alternately, if the type of plasma formed in the chamber and type of substrate treated are held not to be inherent in the functions of the apparatus of Hongoh, it would have been obvious to one of ordinary skill in the art at the time the invention was made to supply the desired gases in the desired amounts to the apparatus of Hongoh to form the desired plasma and to use the desired plasma to treat the desired substrate.

What is missing in Jucha is also not disclosed in, and would not have been suggested by, Hongoh. Hongoh discloses "a plasma processing apparatus which processes a wafer for producing a semiconductor device ..." (col. 1, lines 9-10), but does not disclose uniform etching across a substrate. Claims 24, 25, 27-31, 42, and 43 are patentable over Hongoh for at least similar reasons that those claims are patentable over Jucha.

9. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jucha et al, 4,874,723 in view of Oda et al, Journal of Vacuum Science & Technology (Nov.-Dec. 1996) vol. 14, no. 6, p. 4366-70 "X-ray mask fabrication technology for 0.1 um very large scale integrated circuits". Jucha et al was discussed above. Jucha et al differs from the present invention in that Jucha et al does not teach etching a quartz substrate with SF6 and CF4 such that the rate of etching across the substrate is within 1 % of the rate of etching at the central portion of the substrate. Oda et al teaches etching a quartz substrate with SF6 and CF4. (See section III. B. on pages 4367-68) The motivation for etching a quartz substrate with a mixture SF6 and CF4 in the apparatus of Jucha et al is to provide an etching apparatus in which to carry out the etching process taught by Oda et al. The motivation for optimizing the mixture of gases such that the ratio of plasmas results in an etching rate

across the substrate within 1 % of the rate of etching at the central portion of the substrate is to improve the uniformity of the etching process which results in a more uniformly etched substrate as taught by Oda et al. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the etching method of Oda et al in the apparatus of Jucha et al.

What is missing in Jucha is also not disclosed and would not have been suggested by Oda. While Oda discloses the use of SF6 an CF4, Oda does not disclose and would not have suggested how a ratio of the SF6 and CF4 plasmas affects uniformity of etching rate. Oda does not disclose and would not have suggested a first and a second plasma having a specified ratio such that a combination of the first and second plasmas would etch a substrate at a uniform rate of etching across the substrate, the rate of etching across the substrate being 1% of the rate of etching at a central portion of the substrate, the substrate having a peripheral portion being at least 50 mm from the central portion, as recited in claim 24.

10. Claims 24, 25, 27-31, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hongoh, 6,343,565 B1 in view of Oda et al, Journal of Vacuum Science & Technology (Nov.-Dec. 1996) vol. 14, no. 6, p. 4366-70 "X-ray mask fabrication technology for 0.1 um very large scale integrated circuits". Hongoh was discussed above. Hongoh differs from the present invention in that Hongoh does not teach etching a quartz substrate with SF6 and CF4 such that the rate of etching across the substrate is within 1% of the rate of etching at the central portion of the substrate Oda et al teaches etching a quartz substrate with SF6 and CF4. (See section III. B. on pages 4367-68) The motivation for etching a quartz substrate with a mixture SF6 and CF4 in the apparatus of Hongoh is to provide an etching apparatus in which to carry out the etching process taught by Oda et al. The motivation for optimizing the mixture of gases such that the ratio of plasmas results in an etching rate across the substrate within 1 % of the rate of etching at the central portion of the substrate is to improve the uniformity of the etching process which results in a more uniformly etched substrate as taught by Oda et al. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the etching method of Oda et al in the apparatus of Hongoh.

For reasons stated above, Hongoh and Oda do not disclose and would not have suggested a first and a second plasma having a specified ratio such that a combination of the first and second plasmas would etch a substrate at a uniform rate of etching across the substrate, the rate of etching across the substrate being 1% of the rate of etching at a central portion of the substrate, the substrate having a peripheral portion being at least 50 mm from the central portion, as recited in claim 24.

Claim 27 is patentable for at least similar reasons as claim 24.

Although the etching apparatus of Hongoh and Oda may inherently have a controller, Hongoh and Oda do not disclose and would not have suggested that the controller be configured to control relative amounts of two different types of plasma etchants in the chamber to cause substantially uniform etching across a surface to be etched in the chamber, such that the rate of etching at a peripheral portion of the surface would be within 1% of the rate of etching at a central portion of the surface, as recited in claim 42.

Although the etching apparatus of Hongoh and Oda may inherently have a control mechanism, Hongoh and Oda do not disclose and would not have suggested a control mechanism set to control a sum of positive ions in a first plasma and a second plasma to be substantially uniform across central and peripheral regions of a surface to be etched in the chamber, such that the rate of etching at a peripheral portion of the surface would be within 1% of the rate of etching at a central portion of the surface, as recited in claim 43.

The applicant notes that, just because the etching systems of Hongoh and Oda have control mechanisms that are capable of controlling plasmas in a way recited in claims 42 and 43 does not mean that Hongoh and Oda would have made obvious that the control mechanism be configured or set this way.

11. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jucha et al, 4,874,723 in view of Ikeda et al, US Patent 5,198,755. Jucha et al was discussed above. Jucha et al differs from the present invention in that Jucha et al does not teach etching a quartz substrate, such that the rate of etching across the substrate is within 1 % of the rate of etching at the central portion of the substrate. Ikeda et al teaches etching a quartz plate 50. (Figure 5) The motivation for etching a quartz substrate in the apparatus of Jucha et al is to provide an etching apparatus in which to form the probes taught by Ikeda et al. The motivation for optimizing the mixture of gases such that the ratio of plasmas results in an etching rate across the substrate within 1% of the rate of etching at the central portion of the substrate is to improve the uniformity of the etching process which results in a more uniformly etched substrate as taught by Ikeda et al. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to manufacture the probes of Ikeda et al in the apparatus of Jucha et al.

What is missing in Jucha is also not disclosed in, and would not have been suggested by, Ikeda. Although Ikeda discloses etching a quartz plate into a quartz probe

(abstract), Ikea does not disclose and would not have suggested first and second plasmas having a specified ratio such that a combination of the first and second plasmas would etch a substrate at a uniform rate of etching across the substrate, the rate of etching across the substrate to distances at least 50 mm from a central portion of the substrate being within 1% of the rate of etching at the central portion, as recited in claim 24.

> **12. Applicant's arguments filed February 16, 2006 have been fully considered but they are not persuasive. In regard to the argument that the cited prior art does not teach that the ratio of the plasmas result in a rate of etching across the substrate is within 1 % of the rate of etching at the central portion of the substrate, the Examiner agrees. However, the Examiner notes that such a limitation is not a structural element and has little weight in an apparatus claim. The limitation has been fully considered by the Examiner. The limitation requires that the apparatus at a minimum be capable of supplying two etching gases to the plasma chamber and that each gas supply is controlled by a controller to maintain a flow rate into the plasma chamber and thus maintain the ratio of the plasmas. If the claimed ratio of the plasma is met, then the desired uniform etching rate is achieved. Any plasma reactor supplied with the claimed gases at the claimed rate will achieve the claimed uniform etching rate. All of the cited apparatus include controllers for controlling the supply of the etching gases to the chamber and are therefore capable of supplying the claimed ratio of gases to form the required ratio of plasmas and thus the uniform etch rate across the surface of the substrate. In regard to the argument that a SiO2 film is not a quartz plate, the Examiner disagrees. The term "plate" is broad and includes thin layers of material, i.e. gold plate. Therefore, a SiO2 film can be considered a quartz plate. Further, any additional layers such as a stop etch layer are not limited or prevented by the open language of the claim. In regard to the arguments that the plasma and quartz plate are structural elements, and not contents of an apparatus during the operation of the apparatus or materials worked on by the apparatus, the Examiner disagrees. The formation of a plasma is the very purpose of a plasma apparatus. The apparatus performs work on the gas through the application of energy to form the plasma. The plasma will only exist while the apparatus is in operation. Therefore, the limitation in claims 24 and 27 requiring a chamber having a specific type of plasma is an expression relating the apparatus to contents thereof during an intended operation and as directed by the MPEP 2115 should be of no significance in determining patentability of the apparatus claim, as held in Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Likewise, the quartz plate is supported in the chamber and etched by the plasma formed by the apparatus in the chamber. Therefore, the quartz plate is being worked on by the apparatus, and as held in In re Young, 75 F.2d *>996<, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)) inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims.**

The applicant disagrees. Regarding the limitations related to plasmas, the examiner takes the position that the apparatus includes only the solid structure, excluding the plasmas, then argues that the formation of the plasma is the very purpose of a plasma apparatus, that the plasma will exist only while the apparatus is in operation, and therefore the limitation requiring the

plasmas should be of no significance in determining patentability of the apparatus claim. The examiner assumes that the plasmas are not part of the apparatus, then concludes that the limitations related to the plasmas are expressions relating apparatus to contents thereof during an intended operation. This is circular logic. There is no basis for the examiner's assertion that the plasmas cannot be part of the apparatus.

The examiner quoted Ex parte Thibault, 164 USPQ 666 (Bd. App. 1969) out of context. The claim language considered in Ex parte Thibault is very different from that of claims 24 and 27 of the present application. In Ex parte Thibault, the court stated that

> "If the apparatus as claimed is not fully described in Walker, it differs so little therefrom as to be obvious to the designer of apparatus. The purpose to which the apparatus is to be put and the numerous expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. Walker, as pointed out by the examiner, in the drawing ... discloses a vaporizer, a heater, a cooler ..., and a cold trap in the sequence claimed. The first component of appellant's claim, "a reservoir *** molten condition," reads on either a heated or an insulated tank. It finds full response in the heated feed tank disclosed in Walker. The examiner's rejection of this claim is clearly sustainable."

In Ex parte Thibault, the "reservoir" limitation is met by the prior art heated feed tank of Walker, and the "molten condition" limitation is an expression relating the apparatus to contents thereof during an intended operation. By contrast, claims 24 and 27 of the present application positively recites "a first plasma," "a second plasma," and properties of the first and second plasmas. This is different from the "molten condition" limitation in Ex parte Thibault.

Claim 42 recites "a controller configured to ...," and claim 43 recites "a control mechanism set to ..." These limitations require that the controller be configured or set in a particular way as recited in the claims. These are limitations of the apparatus, and are not expressions relating the apparatus to contents thereof during an intended operation.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner. Any circumstance in which the applicant has made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims. Any circumstance in which the applicant has amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

Enclosed is a check of $400 for the excess claims fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 7/7/2006

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